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The Regents of the University of California

<120> Nucleic Acids That Control Seed and Fruit
Development in Plants

<130> 023070-086120US

<140> 09/177,249

<141> 1998-10-22

<150> US 09/071,838

<151> 1998-05-01

<160> 324

<170> PatentIn Ver. 2.0

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<222> (43)..(2112)

<223> fertilization-independent endosperm 1 (FIE1) cDNA

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 Pro Cys Thr Cys Lys Ser Lys Cys Gly Gln Gln Cys Pro Cys Leu Thr
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 Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp Gln Leu Glu Ile Asp
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 Ala Arg Arg Lys Gly Asn Glu Phe Lys Phe Leu Asn His Ser Ala Arg
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Gly Leu Phe Ala Glu Arg Ala Ile Glu Glu Gly Glu Glu Leu Phe Phe
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Arg Ile Gln Glu Gly Lys Lys Pro Leu Tyr Ala Val Val Phe Asn Phe
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Ile Thr Leu Tyr Asn Cys Leu Gly Asp Gly Ala Ile Ser Ala Leu Gln
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Ser Tyr Ala Asp Gly Asp Lys Glu Glu Ser Phe Tyr Thr Val Ser Trp
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Leu Val Gly His Gly Asp Ser Val Asn Glu Ile Arg Thr Gln Pro Leu
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Lys Pro Gln Leu Val Ile Thr Ala Ser Lys Asp Glu Ser Val Arg Leu
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Trp Asn Val Glu Thr Gly Ile Cys Ile Leu Ile Phe Ala Gly Ala Gly
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175 180 185

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Phe Ile Leu Ser Lys Ser Val Asp Asn Glu Ile Leu Leu Trp Glu Pro
255 260 265

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Gln Leu Lys Glu Asn Ser Pro Gly Glu Gly Ala Ser Asp Val Leu Leu
270 275 280

aga tac ccg gtt cca atg tgt gat att tgg ttt atc aag ttt tct tgt 1095
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 Tyr Val Trp Asp Leu Lys Ser Cys Pro Pro Val Leu Ile Thr Lys Leu
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 335 340 345

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 Trp Asp Val Ile Thr Lys
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gtataccctt tctggagatt ttgtcttatt ctcttagttc aatacacaaag gctgtatcct 1515

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Phe Asp Val Phe Val Thr Ala Gly Gly Asn Arg Ile Thr Leu Tyr Asn
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Cys Leu Gly Asp Gly Ala Ile Ser Ala Leu Gln Ser Tyr Ala Asp Glu
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Asp Lys Glu Glu Ser Phe Tyr Thr Val Ser Trp Ala Cys Gly Val Asn
 85 90 95

Gly Asn Pro Tyr Val Ala Ala Gly Gly Val Lys Gly Ile Ile Arg Val
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Ile Asp Val Asn Ser Glu Thr Ile His Lys Ser Leu Val Gly His Gly
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Asp Ser Val Asn Glu Ile Arg Thr Gln Pro Leu Lys Pro Gln Leu Val
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Ile Thr Ala Ser Lys Asp Glu Ser Val Arg Leu Trp Asn Val Glu Thr
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 Val Leu Ser Val Asp Phe His Pro Ser Asp Ile Tyr Arg Phe Ala Ser
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 Cys Gly Met Asp Thr Thr Ile Lys Ile Trp Ser Met Lys Glu Phe Trp
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 Thr Tyr Val Glu Lys Ser Phe Thr Trp Thr Asp Asp Pro Ser Lys Phe
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 Pro Thr Lys Phe Val Gln Phe Pro Val Phe Thr Ala Ser Ile His Thr
 225 230 235 240
 Asn Tyr Val Asp Cys Asn Arg Trp Phe Gly Asp Phe Ile Leu Ser Lys
 245 250 255
 Ser Val Asp Asn Glu Ile Leu Leu Trp Glu Pro Gln Leu Lys Glu Asn
 260 265 270
 Ser Pro Gly Glu Gly Ala Ser Asp Val Leu Leu Arg Tyr Pro Val Pro
 275 280 285
 Met Cys Asp Ile Trp Phe Ile Lys Phe Ser Cys Asp Leu His Leu Ser
 290 295 300
 Ser Val Ala Ile Gly Asn Gln Glu Gly Lys Val Tyr Val Trp Asp Leu
 305 310 315 320
 Lys Ser Cys Pro Pro Val Leu Ile Thr Lys Leu Ser His Asn Gln Ser
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SET/polycomb gene genomic sequence reading frame 1

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Cys Gln Thr Lys Tyr Asn Leu Phe Phe Leu Val Gln Arg Asn	900 905 910
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 1730 1735 1740

aaa aac ttt ata tat agc tgt gga gat ggc act ctt ggt gag aca cca 5280
 Lys Asn Phe Ile Tyr Ser Cys Gly Asp Gly Thr Leu Gly Glu Thr Pro
 1745 1750 1755 1760

gtg caa atc caa tgc aag aac atg caa ttc ctc ctt caa acc aat aaa 5328
 Val Gln Ile Gln Cys Lys Asn Met Gln Phe Leu Leu Gln Thr Asn Lys
 1765 1770 1775

aag gta atc aac gtc aaa tcc gta ccg aaa att taa aac taa tta tac 5376
 Lys Val Ile Asn Val Lys Ser Val Pro Lys Ile Asn Leu Tyr
 1780 1785 1790

gaa aga cat tta act atc att tcc cgt att tta cta gat tct cat tgg 5424
 Glu Arg His Leu Thr Ile Ile Ser Arg Ile Leu Leu Asp Ser His Trp
 1795 1800 1805

aaa gtc tga tgt tca tgg atg ggg tgc att tac atg ggt aag caa tca 5472
 Lys Val Cys Ser Trp Met Gly Cys Ile Tyr Met Gly Lys Gln Ser
 1810 1815 1820

tgt aaa tat aag aat aag ttt aat agt tat tgg tgc att cat aac act Cys Lys Tyr Lys Asn Lys Phe Asn Ser Tyr Trp Cys Ile His Asn Thr 1825 1830 1835 1840	5520
ttt ttt ttt tta ata atg ttt tat act tta gac cat taa ata tat tgt Phe Phe Phe Leu Ile Met Phe Tyr Thr Leu Asp His Ile Tyr Cys 1845 1850 1855	5568
gtg ata tgg ttt gac cgg tca gga ctc tct taa aaa gaa tga gta tct Val Ile Trp Phe Asp Pro Ser Gly Leu Ser Lys Glu Val Ser 1860 1865 1870	5616
cgg aga ata tac tgg aga act gat cac tca tga tga agc taa tga gcg Arg Arg Ile Tyr Trp Arg Thr Asp His Ser Ser Ala 1875 1880 1885	5664
tgg gag aat aga aga tcg gat tgg ttc ttc cta cct ctt tac ctt gaa Trp Glu Asn Arg Arg Ser Asp Trp Phe Phe Leu Pro Leu Tyr Leu Glu 1890 1895 1900	5712
tga tca ggt aac ttc aga ata att ttg aag taa cgt ttt aat cat tcg Ser Gly Asn Phe Arg Ile Ile Leu Lys Arg Phe Asn His Ser 1905 1910 1915 1920	5760
cgg gtt aca cat cta ttc gaa tca aag taa cat tta ttt tac agc tcg Arg Val Thr His Leu Phe Glu Ser Lys His Leu Phe Tyr Ser Ser 1925 1930 1935	5808
aaa tcg atg ctc gcc gta aag gaa acg agt tca aat ttc tca atc act Lys Ser Met Leu Ala Val Lys Glu Thr Ser Ser Asn Phe Ser Ile Thr 1940 1945 1950	5856
cag caa gac cta act gct acg cca agg tac taa gcc gtt ata ctt tat Gln Gln Asp Leu Thr Ala Thr Pro Arg Tyr Ala Val Ile Leu Tyr 1955 1960 1965	5904
ctt gaa caa ata cta aca tta tac aaa caa aaa tac tta tgt tag ttt Leu Glu Gln Ile Leu Thr Leu Tyr Lys Gln Lys Tyr Leu Cys Phe 1970 1975 1980	5952
ctt tag tta aat cgt gta tca act tta ctc gtc gtt gat tgg ttt tca Leu Leu Asn Arg Val Ser Thr Leu Leu Val Val Asp Trp Phe Ser 1985 1990 1995 2000	6000
tat tga aga tat tcc aag aaa ctc aaa ctc att tta aat gat ttt ttc Tyr Arg Tyr Ser Lys Lys Leu Lys Leu Ile Leu Asn Asp Phe Phe 2005 2010 2015	6048
ttg tcg aga aaa ttt agg tta cga aaa ttt atg gtt tcg tgt gca gtt Leu Ser Arg Lys Phe Arg Leu Arg Lys Phe Met Val Ser Cys Ala Val 2020 2025 2030	6096
gat gat tgt gag agg aga tca gag gat tgg tct att tgc gga gag agc Asp Asp Cys Glu Arg Arg Ser Glu Asp Trp Ser Ile Cys Gly Glu Ser 2035 2040 2045	6144

aat cga aga agg tga gga gct ttt ctt cga cta ctg cta tgg acc aga	6192
Asn Arg Arg Arg Gly Ala Phe Leu Arg Leu Leu Trp Thr Arg	
2050 2055 2060	
aca tgc gga ttg gtc gcg tgg tcg aga acc tag aaa gac tgg tgc ttc	6240
Thr Cys Gly Leu Val Ala Trp Ser Arg Thr Lys Asp Trp Cys Phe	
2065 2070 2075 2080	
taa aag gtc taa gga agc ccg tcc agc tcg tta gtt ttt gat ctg agg	6288
Lys Val Gly Ser Pro Ser Ser Ser Leu Val Phe Asp Leu Arg	
2085 2090 2095	
aga agc agc aat tca agc agt cct ttt ttt atg tta tgg tat atc aat	6336
Arg Ser Ser Asn Ser Ser Ser Pro Phe Met Leu Trp Tyr Ile Asn	
2100 2105 2110	
taa taa tgt aat gct att ttg tgt tac taa acc aaa act taa gtt tct	6384
Cys Asn Ala Ile Leu Cys Tyr Thr Lys Thr Val Ser	
2115 2120 2125	
ggt tta ttt gtt tta ggg tgt ttt gtt tgt atc ata tgt gtc tta act	6432
Val Leu Phe Val Leu Gly Cys Phe Val Cys Ile Ile Cys Val Leu Thr	
2130 2135 2140	
ttc aaa gtt ttc ttt ttg tat ttc aat tta aaa aca atg ttt atg ttg	6480
Phe Lys Val Phe Phe Leu Tyr Phe Asn Leu Lys Thr Met Phe Met Leu	
2145 2150 2155 2160	
tta gtt tgc ata gac ctt tgg aaa aaa aaa gct ttg cac aac ttt aca	6528
Leu Val Cys Ile Asp Leu Trp Lys Lys Lys Ala Leu His Asn Phe Thr	
2165 2170 2175	
ttt att tag tct tca ttt agc gaa aaa tca cat aac aca agt ctg tgg	6576
Phe Ile Ser Ser Phe Ser Glu Lys Ser His Asn Thr Ser Leu Trp	
2180 2185 2190	
tac gta atg tac aaa aat gtc aaa ata atg ggt ttt atc att aaa aaa	6624
Tyr Val Met Tyr Lys Asn Val Lys Ile Met Gly Phe Ile Ile Lys Lys	
2195 2200 2205	
aaa tat tgg tta tga atg aag tat agt tag aat ttt agg tat tag ctc	6672
Lys Tyr Trp Leu Met Lys Tyr Ser Asn Phe Arg Tyr Leu	
2210 2215 2220	
ggt tgg ttt taa aac gtt ttt cga gat tta att ttg tag tct att gag	6720
Val Trp Phe Asn Val Phe Arg Asp Leu Ile Leu Ser Ile Glu	
2225 2230 2235 2240	
taa tac atg gaa gaa tca tca aca aag tgg ctg tag ctt acg aaa ggt	6768
Tyr Met Glu Glu Ser Ser Thr Lys Trp Leu Leu Thr Lys Gly	
2245 2250 2255	
ttt act tta atg taa ata tgt att tga tgc atc taa cat tta gta tct	6816
Phe Thr Leu Met Ile Cys Ile Cys Ile His Leu Val Ser	
2260 2265 2270	

25

aaa caa ata aaa aca aaa aaa aag aaa aaa gct ctt taa aat ccg aaa 6864
 Lys Gln Ile Lys Thr Lys Lys Lys Lys Ala Leu Asn Pro Lys
 2275 2280 2285

gta act att ttc aaa aaa tct aaa tta taa act taa atg ttt gga atc 6912
 Val Thr Ile Phe Lys Lys Ser Lys Leu Thr Met Phe Gly Ile
 2290 2295 2300

gcg aac gac tat tgc taa ata taa atg cta aat ata cat gaa gat gtg 6960
 Ala Asn Asp Tyr Cys Ile Met Leu Asn Ile His Glu Asp Val
 2305 2310 2315 2320

aaa aac atg ttg gat ttg tgg aat cgt taa tga cca cgg tta aat ggc 7008
 Lys Asn Met Leu Asp Leu Trp Asn Arg Pro Arg Leu Asn Gly
 2325 2330 2335

ggg atc c 7015
 Gly Ile

<210> 7
 <211> 34
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<400> 7
 Gly Ser Ile Ile Phe Lys Asn Gln Ile Phe Ser Tyr Leu Leu Phe Val
 1 5 10 15

Ser Lys Lys Lys Lys Thr His Asp Asp Tyr Pro Ser Ala Gly Cys Val
 20 25 30

His Arg

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<400> 8
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 1 5 10

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<400> 9
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Glu Lys

<210> 10
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 <212> PRT
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<400> 10
 Glu Arg Glu Pro Leu Trp
 1 5

<210> 11
 <211> 20
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<400> 11
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 1 5 10 15

Asn Leu Cys Ser
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<210> 12
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<400> 12
 Met Thr Ile Asp Val Ala Ala Asn Tyr Ser Leu Asn Ala Phe Ile
 1 5 10 15

<210> 13
 <211> 307
 <212> PRT
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<400> 13
 Ile Phe Leu Thr Ser Ser Val Pro Ser His Ser Arg Asn Ser Ile Ile
 1 5 10 15

Pro Phe Ser Phe Phe Ser Val Phe Gln Ser Leu Arg Ile Lys Met
 20 25 30

Glu His Glu Glu Thr Gln Lys Asn Thr Arg Asn Ser Trp Ser Leu Ile
 35 40 45

Arg Pro Phe Gln Met Ile Ser Ile Ser Phe Leu Ser Leu Leu Leu Pro
 50 55 60

Leu Ser Phe Leu Phe Leu Ser Arg Leu Ser Leu Tyr Thr Ser Ser Thr
 65 70 75 80

Pro Val Thr Val Ser Gly Val Ser Ser Val Ile His Gln Ala Asp Val
 85 90 95

Gly Val Leu Tyr Thr Ile Leu Phe Leu Ile Ile Val Phe Thr Leu Ile
100 105 110

His Ser Leu Ser Gly Lys Pro Glu Cys Ser Val Leu His Ser His Leu
115 120 125

Tyr Ile Cys Trp Ile Val Leu Phe Ile Ala Gln Ala Cys Ala Phe Gly
130 135 140

Ile Lys Arg Thr Met Ser Thr Thr Met Ser Ile Asn Pro Asp Lys Asn
145 150 155 160

Leu Phe Leu Ala Thr His Glu Arg Trp Met Leu Val Arg Val Leu Phe
165 170 175

Phe Leu Gly Leu His Glu Val Met Leu Met Trp Phe Arg Val Val Val
180 185 190

Lys Pro Val Val Asp Asn Thr Ile Tyr Gly Val Tyr Val Glu Glu Arg
195 200 205

Trp Ser Glu Arg Ala Val Val Ala Val Thr Phe Gly Ile Met Trp Trp
210 215 220

Trp Arg Leu Arg Asp Glu Val Glu Ser Leu Val Val Val Val Thr Ala
225 230 235 240

Asp Arg Leu Asn Leu Pro Ile Arg Leu Glu Gly Leu Asn Phe Val Asn
245 250 255

Trp Cys Met Tyr Tyr Ile Cys Val Gly Ile Gly Leu Met Lys Ile Phe
260 265 270

Lys Gly Phe Leu Asp Phe Val Asn Thr Leu Thr Leu Ser Ile Lys Arg
275 280 285

Ser Arg Lys Gly Cys Glu Ser Cys Val Phe Asp Asp Met Cys Asn Asp
290 295 300

Asp His Val
305

<210> 14

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 14

His Ile Ile Leu Ile Ser

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<210> 15

<211> 42

<212> PRT

<213> Arabidopsis sp.

<400> 15
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 1 5 10 15

Leu Thr Arg Ile Tyr Val Thr Lys Ile Val Glu Tyr Gln Lys Ala Lys
 20 25 30

Ile Phe Tyr Leu Lys Ile Thr Ile Glu His
 35 40

<210> 16

<211> 14

<212> PRT

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<400> 16

Phe Lys Ser Phe Tyr Asn Tyr Ile Phe Ile Thr His Pro Phe
 1 5 10

<210> 17

<211> 26

<212> PRT

<213> Arabidopsis sp.

<400> 17

Glu Lys Leu Gly Asp Leu Ile Asn Val Ile Asn Ser Lys Lys Tyr Arg
 1 5 10 15

Ile Tyr Val Glu Val Leu Asn Ala Tyr Asn
 20 25

<210> 18

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<212> PRT

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<400> 18

Ile Tyr Glu Leu Asn Asn Ile Ala Ile Tyr Ile Phe Leu Lys Ile
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<210> 19

<211> 9

<212> PRT

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<400> 19

Thr His Phe Val Ser Ser Ile Tyr Ala
 1 5

<210> 20
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<400> 20
 Tyr Ile Ser Leu Asn Arg Lys Leu Ala Arg Asn Glu Tyr
 1 5 10

<210> 21
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<400> 21
 Tyr Lys Ser Tyr Arg Thr Leu Gln Asn Val Tyr Ile Asp Leu Ser Thr
 1 5 10 15

Phe Phe His Trp Phe Thr Lys Pro Ser Cys His Ile Asn Met Ser
 20 25 30

<210> 22
 <211> 31
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<400> 22
 Arg Leu Phe Phe Tyr Asn Ile Val Tyr Glu Phe Lys Leu Glu Leu Ser
 1 5 10 15

Asn Val Lys Gln Thr Gln His Leu His Thr Tyr Ser Thr Ile Phe
 20 25 30

<210> 23
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<400> 23
 Lys Leu Lys Phe Ser
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<210> 24
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<400> 24
 Ile Ser His Ile Ile Phe Leu Leu Lys Gln Ala Ser Pro Asn Thr Phe
 1 5 10 15

Leu Pro Asp Tyr Asn Phe Pro
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<210> 25
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<400> 25
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 1 5 10 15

Leu Ser Phe Ser Pro Thr Ser Glu Lys Thr Arg Lys Lys Glu Glu Ala
 20 25 30

Ser Gly

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<400> 26
 Trp Arg Arg Leu Val Ser Leu Gln Thr Tyr Met Asn
 1 5 10

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<400> 27
 Leu Gly Tyr Glu Ile His Ile Phe
 1 5

<210> 28
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<400> 28
 Leu Cys Val Tyr Asp Arg Ser Ile Thr Phe Arg Val Glu Phe Ser Cys
 1 5 10 15

Asp Leu Leu Cys Tyr Ser Ser His Ala
 20 25

<210> 29
 <211> 24
 <212> PRT
 <213> Arabidopsis sp.

<400> 29
 Ser Ile Lys Leu Leu Phe Leu Asn Leu Ser Arg Lys Thr Met Arg Thr
 1 5 10 15

Met Val Arg Val Cys His Pro Asn
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<210> 30
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<400> 30
Lys Ser Lys Ser Lys Arg Arg Asp Phe Cys Ile Ser Arg
1 5 10

<210> 31
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<212> PRT
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<400> 31
Glu Thr Phe Gly Cys Phe Asn Ile Leu Phe Ser Ser Val Cys Phe Ser
1 5 10 15

Glu Asn

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<400> 32
Gly Glu Glu Arg Thr
1 5

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<400> 33
Ser His Asn Tyr Thr Ile Pro Lys Arg Cys
1 5 10

<210> 34
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Asp Thr Ser Asn Lys Gln Leu Tyr Ile Ser His Asn Leu
1 5 10

<210> 35
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<400> 35
 Lys Glu Lys Phe Pro Asn Phe
 1 5

<210> 36
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<400> 36
 Ile Lys Asn Arg Ile
 1 5

<210> 37
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<400> 37
 Lys Met Pro Ala Asn Arg
 1 5

<210> 38
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<400> 38
 Arg His Pro Asp Leu Ser Gly Ile Gln Asn Leu Glu
 1 5 10

<210> 39
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<400> 39
 Tyr Ile Tyr Asn Ile Lys Leu Glu Leu Arg Leu
 1 5 10

<210> 40
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 <212> PRT
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<400> 40
 Asn Lys Ile Glu Asn Asn Ser Arg Phe Phe Cys Phe Cys Gln Thr Lys
 1 5 10 15

<210> 41
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<400> 41
 Tyr Asn Leu Phe Phe Leu Val Gln Arg Asn
 1 5 10

<210> 42
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<400> 42
 Ile Gly Pro Asn Cys Phe Phe Phe Asn Ile Gln Pro Lys Lys Pro Arg
 1 5 10 15
 Leu Met His Ile Ser Arg Asn Arg Asn Gln Asn Phe Cys Ile Gln Val
 20 25 30

Phe

<210> 43
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 <212> PRT
 <213> Arabidopsis sp.

<400> 43
 Phe His Tyr Ile
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<210> 44
 <211> 6
 <212> PRT
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<400> 44
 Ser Pro Val Ser Glu Ile
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<210> 45
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<400> 45

Lys Ile Ile Tyr Leu Tyr Ile Thr
1 5

<210> 46

<211> 23

<212> PRT

<213> Arabidopsis sp.

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Leu Thr Glu Lys Ile Arg Ala Glu Ile His Ser Lys Cys Gly Tyr Ser
1 5 10 15Cys Phe Thr Pro Ser Ile Val
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<400> 47

Leu Lys Pro Ala Arg Cys Arg Gly
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<210> 48

<211> 22

<212> PRT

<213> Arabidopsis sp.

<400> 48

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<210> 49

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 49

Phe Leu Arg Arg Ser Arg Leu Cys Ser
1 5

<210> 50

<211> 6

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Gly Ser Arg Leu Cys Ser
1 5

<210> 51

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<212> PRT

<213> Arabidopsis sp.

<400> 51

Arg Arg Cys Thr Ile Ile Ser
1 5

<210> 52

<211> 13

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<213> Arabidopsis sp.

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Arg Cys Thr Ile Ile Thr Lys Cys Gln Ala Ser Asn Cys
1 5 10

<210> 53

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Glu Ala Thr Thr Ile His Tyr Met Gly Leu His Gln Lys Ala Cys Val
1 5 10 15Phe Phe Val Ser Tyr
20

<210> 54

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<213> Arabidopsis sp.

<400> 54

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1 5 10

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<400> 55

Cys Ile Tyr Thr Phe Leu
1 5

<210> 56
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<400> 56
 His Cys Ser Ser Gln Leu Met Ala Glu Ser Asp Ser Val Ile Gly Lys
 1 5 10 15
 Arg Gln Ile Tyr Tyr Leu Asn Gly Glu Ala Leu Glu Leu Ser Ser Glu
 20 25 30
 Glu Asp Glu Glu Asp Glu Glu Glu Asp Glu Glu Glu Ile Lys Lys Glu
 35 40 45
 Lys Cys Glu Phe Ser Glu Asp Val Asp Arg Phe Ile Trp Leu Val Phe
 50 55 60
 Ala Leu His Met Phe Leu Ile Ile Asn Leu
 65 70

<210> 57
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<400> 57
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 1 5 10 15
 Thr Met Val Trp Met Ile Trp Ser Cys Gly Val Leu Ser Pro Ser Thr
 20 25 30
 Ser Lys Trp Met Phe Arg Thr Tyr Trp
 35 40

<210> 58
 <211> 17
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 <213> Arabidopsis sp.

<400> 58
 Gln Tyr Ser Asn Lys Asn Phe Ile Arg Arg Ser Ile Thr Phe Leu Leu
 1 5 10 15
 Ile

<210> 59
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 <212> PRT
 <213> Arabidopsis sp.

<400> 59

Phe Leu Leu Phe Phe Val Val Arg Asn Val Leu Asn Phe Gln Ile
 1 5 10 15

<210> 60

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 60

Cys Arg Lys Asp Thr Met Asn Ser Ser Leu Arg Met Met Glu Leu Leu
 1 5 10 15

Val Arg Leu Leu Ile
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<210> 61

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 61

His Pro Arg Gln
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<210> 62

<211> 17

<212> PRT

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<400> 62

Leu Leu Leu Ser Arg Ile Leu Leu Ile Asp Val Ile Ala Val Val Ala
 1 5 10 15

Trp

<210> 63

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 63

Ile Phe Leu Phe
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<210> 64

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 64

Phe Ser His Lys Lys Gly Arg
1 5

<210> 65

<211> 20

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<213> Arabidopsis sp.

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Ser Tyr Met Phe Leu Phe Tyr Phe Ile Ile Cys Phe Thr Asp Ile Arg
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<211> 4

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<213> Arabidopsis sp.

<400> 66

Ile Arg Lys His
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<210> 67

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 67

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1 5 10 15

Lys

<210> 68

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 68

Leu Asp Cys Phe Gly Leu Ser Glu Arg Arg Gln Ile
1 5 10

<210> 69

<211> 4

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<213> Arabidopsis sp.

<400> 69

Thr Thr Met Gln

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10

15

Phe Cys Leu Phe Leu Asn Tyr Val Tyr

20

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<400> 71

Ile Gly Glu Glu Cys Asp Arg Ser

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5

<210> 72

<211> 4

<212> PRT

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<400> 72

Ser Cys Asp Gly

1

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<211> 28

<212> PRT

<213> Arabidopsis sp.

<400> 73

Leu Tyr Ile Lys Gln Asp Cys Gly Leu Arg Ser Lys Gln His Tyr Val

1

5

10

15

Asp Ala Cys Arg Glu Gly Ser Leu Leu Glu Arg Asn

20

25

<210> 74

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<400> 74

Asp Ile Trp Glu Lys Gln Val Lys Lys
 1 5

<210> 75

<211> 18

<212> PRT

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<400> 75

Cys Ile Asn Ile Tyr Thr Tyr Thr Val Phe Leu Asp Tyr Ala Gly Ser
 1 5 10 15

Gln Leu

<210> 76

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<400> 76

Cys Cys Ile Lys His Thr Ser Gly Ala
 1 5

<210> 77

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 77

Asp Val Pro Arg Asp Leu Gln Leu His Ala Arg Thr Arg Ser Met Tyr
 1 5 10 15

Tyr Val Ile Arg Pro
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<210> 78

<211> 32

<212> PRT

<213> Arabidopsis sp.

<400> 78

Gln Asn Tyr Thr Lys Thr Gln Ser Gly Thr Leu Thr Tyr Val Val Ile
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Ile Leu Met Thr Cys Met Leu Lys Thr His Glu Val Ser Tyr Met Cys
 20 25 30

<210> 79

<211> 33

<212> PRT

<213> Arabidopsis sp.

<400> 79
 Trp Phe Tyr His Arg Leu Pro Lys Lys Tyr Leu Glu Lys Val Val Gly
 1 5 10 15

Arg Ser Ala Lys Asn Arg Asp Ser Glu Asn Met Leu Val Ile Arg Leu
 20 25 30

Leu

<210> 80
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<400> 80
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 1 5 10 15

Ala Leu Ala Ser Gln Asn Val Asp Ser Asn Ala Leu Val
 20 25

<210> 81
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<400> 81
 Leu Thr Lys Ile Ala Ala Arg Asn Ile Ala Gly Met Ser Phe Asn Phe
 1 5 10 15

Ser

<210> 82
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 <212> PRT
 <213> Arabidopsis sp.

<400> 82
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 1 5 10 15

Phe Arg Cys Ser Lys Asp Cys Asn Asn Arg Phe Gly Gly Cys Asn Cys
 20 25 30

Ala Ile Gly Gln Cys Thr Asn Arg Gln Cys Pro Cys Phe Ala Ala Asn
 35 40 45

Arg Glu Cys Asp Pro Asp Leu Cys Arg Ser Cys Pro Leu Arg
 50 55 60

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 <211> 66
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<400> 83
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 Ser Asn Gln Lys Ser Tyr Lys Lys Asn Phe Ile Tyr Ser Cys Gly Asp
 20 25 30
 Gly Thr Leu Gly Glu Thr Pro Val Gln Ile Gln Cys Lys Asn Met Gln
 35 40 45
 Phe Leu Leu Gln Thr Asn Lys Lys Val Ile Asn Val Lys Ser Val Pro
 50 55 60
 Lys Ile
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 Leu Tyr Glu Arg His Leu Thr Ile Ile Ser Arg Ile Leu Leu Asp Ser
 1 5 10 15
 His Trp Lys Val
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<400> 85
 Cys Ser Trp Met Gly Cys Ile Tyr Met Gly Lys Gln Ser Cys Lys Tyr
 1 5 10 15
 Lys Asn Lys Phe Asn Ser Tyr Trp Cys Ile His Asn Thr Phe Phe Phe
 20 25 30
 Leu Ile Met Phe Tyr Thr Leu Asp His
 35 40

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<400> 86
 Ile Tyr Cys Val Ile Trp Phe Asp Pro Ser Gly Leu Ser
 1 5 10

<210> 87
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<400> 87
 Val Ser Arg Arg Ile Tyr Trp Arg Thr Asp His Ser
 1 5 10

<210> 88
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<400> 88
 Ala Trp Glu Asn Arg Arg Ser Asp Trp Phe Phe Leu Pro Leu Tyr Leu
 1 5 10 15

Glu

<210> 89
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<400> 89
 Ser Gly Asn Phe Arg Ile Ile Leu Lys
 1 5

<210> 90
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<400> 90
 Arg Phe Asn His Ser Arg Val Thr His Leu Phe Glu Ser Lys
 1 5 10

<210> 91
 <211> 32
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<400> 91
 His Leu Phe Tyr Ser Ser Lys Ser Met Leu Ala Val Lys Glu Thr Ser
 1 5 10 15

Ser Asn Phe Ser Ile Thr Gln Gln Asp Leu Thr Ala Thr Pro Arg Tyr
 20 25 30

<210> 92
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<400> 92
 Ala Val Ile Leu Tyr Leu Glu Gln Ile Leu Thr Leu Tyr Lys Gln Lys
 1 5 10 15

Tyr Leu Cys

<210> 93
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<400> 93
 Leu Asn Arg Val Ser Thr Leu Leu Val Val Asp Trp Phe Ser Tyr
 1 5 10 15

<210> 94
 <211> 50
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<400> 94
 Arg Tyr Ser Lys Lys Leu Lys Leu Ile Leu Asn Asp Phe Phe Leu Ser
 1 5 10 15

Arg Lys Phe Arg Leu Arg Lys Phe Met Val Ser Cys Ala Val Asp Asp
 20 25 30

Cys Glu Arg Arg Ser Glu Asp Trp Ser Ile Cys Gly Glu Ser Asn Arg
 35 40 45

Arg Arg
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 Gly Ala Phe Leu Arg Leu Leu Leu Trp Thr Arg Thr Cys Gly Leu Val
 1 5 10 15

Ala Trp Ser Arg Thr
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 <212> PRT
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<400> 96
 Lys Asp Trp Cys Phe
 1 5

<210> 97
 <211> 28
 <212> PRT
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<400> 97
 Gly Ser Pro Ser Ser Ser Leu Val Phe Asp Leu Arg Arg Ser Ser Asn
 1 5 10 15

Ser Ser Ser Pro Phe Phe Met Leu Trp Tyr Ile Asn
 20 25

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<400> 98
 Cys Asn Ala Ile Leu Cys Tyr
 1 5

<210> 99
 <211> 52
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<400> 99
 Val Ser Val Leu Phe Val Leu Gly Cys Phe Val Cys Ile Ile Cys Val
 1 5 10 15

Leu Thr Phe Lys Val Phe Phe Leu Tyr Phe Asn Leu Lys Thr Met Phe
 20 25 30

Met Leu Leu Val Cys Ile Asp Leu Trp Lys Lys Lys Ala Leu His Asn
 35 40 45

Phe Thr Phe Ile
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<210> 100
 <211> 33
 <212> PRT
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<400> 100
 Ser Ser Phe Ser Glu Lys Ser His Asn Thr Ser Leu Trp Tyr Val Met
 1 5 10 15

Tyr Lys Asn Val Lys Ile Met Gly Phe Ile Ile Lys Lys Lys Tyr Trp
 20 25 30

Leu

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<400> 101
 Met Lys Tyr Ser
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<400> 102
 Asn Phe Arg Tyr
 1

<210> 103
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<400> 103
 Leu Val Trp Phe
 1

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 <211> 8
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<400> 104
 Asn Val Phe Arg Asp Leu Ile Leu
 1 5

<210> 105
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<400> 105

Tyr Met Glu Glu Ser Ser Thr Lys Trp Leu
1 5 10

<210> 106

<211> 8

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<400> 106

Leu Thr Lys Gly Phe Thr Leu Met
1 5

<210> 107

<211> 16

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<400> 107

His Leu Val Ser Lys Gln Ile Lys Thr Lys Lys Lys Lys Lys Ala Leu
1 5 10 15

<210> 108

<211> 12

<212> PRT

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<400> 108

Asn Pro Lys Val Thr Ile Phe Lys Lys Ser Lys Leu
1 5 10

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<211> 9

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<400> 109

Met Phe Gly Ile Ala Asn Asp Tyr Cys
1 5

<210> 110

<211> 17

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<400> 110

Met Leu Asn Ile His Glu Asp Val Lys Asn Met Leu Asp Leu Trp Asn
1 5 10 15

Arg

<400> 115
 Thr Trp Leu Pro Ile Thr Val Leu Met Leu Leu Tyr Arg Ser Phe Leu
 1 5 10 15

His Pro Leu Phe Leu His Ile Gln Glu Thr Val Ser Ser His Phe Leu
 20 25 30

Ser Ser Ser Gln Cys Phe Asn Leu Cys Glu Leu Arg Trp Asn Met Lys
 35 40 45

Lys His Lys Arg Thr Gln Glu Thr Ala Gly Pro
 50 55

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<211> 5

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<213> Arabidopsis sp.

<400> 116

Phe Asp His Phe Lys
 1 5

<210> 117

<211> 57

<212> PRT

<213> Arabidopsis sp.

<400> 117

Ser Pro Leu Ala Phe Leu Ala Ser Ser Ser Leu Tyr Leu Ser Ser Phe
 1 5 10 15

Phe His Val Ser Leu Ser Ile Pro Pro Gln Leu Arg Ser Pro Ser Pro
 20 25 30

Ala Phe Pro Leu Leu Phe Thr Arg Gln Met Ser Glu Ser Tyr Thr Arg
 35 40 45

Ser Cys Phe Ser Ser Ser Ser Ser Leu
 50 55

<210> 118

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 118

Ser Thr Val Ser Gln Glu Asn Gln Asn Ala Leu Phe Ser Ile Pro Ile
 1 5 10 15

Ser Thr Ser Ala Gly Ser Phe Ser Ser Ser Pro Lys Leu Val Pro Leu
 20 25 30

Gly Ser Lys Glu Pro
 35

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<400> 119
 Ala Arg Pro Cys Leu
 1 5

<210> 120
 <211> 27
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<400> 120
 Ile Gln Thr Lys Thr Cys Phe Leu Arg His Met Lys Asp Gly Cys Trp
 1 5 10 15

Leu Gly Phe Cys Ser Phe Trp Gly Tyr Thr Lys
 20 25

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 <211> 31
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<400> 121
 Cys Gly Leu Glu Ser Trp Leu Ser Leu Trp Leu Thr Thr Leu Tyr Met
 1 5 10 15

Gly Ser Thr Trp Arg Arg Gly Gly Pro Arg Glu Pro Leu Trp Gln
 20 25 30

<210> 122
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.

<400> 122
 Cys Gly Gly Gly
 1 5

<210> 123
 <211> 23
 <212> PRT
 <213> Arabidopsis sp.

<400> 123
 Lys Val Leu Trp Trp Trp Leu Arg Arg Ile Asp Leu Thr Ser Pro Phe
 1 5 10 15

Val Trp Arg Val Ser Ile Leu
 20

<210> 124
 <211> 12
 <212> PRT
 <213> Arabidopsis sp.

<400> 124
 Thr Gly Val Cys Ile Thr Ser Val Leu Glu Leu Val
 1 5 10

<210> 125
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.

<400> 125
 Arg Ser Ser Lys Gly Phe Trp Ile Leu
 1 5

<210> 126
 <211> 36
 <212> PRT
 <213> Arabidopsis sp.

<400> 126
 Ala Leu Arg Gly Arg Glu Lys Ala Val Asn His Val Phe Leu Met Ile
 1 5 10 15

Cys Val Met Met Ile Met Cys Lys Ile Phe Asp Ile Leu Tyr Ser Ser
 20 25 30

Leu Glu Cys Phe
 35

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 <212> PRT
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<400> 127
 Asp Phe Phe Ile Phe Ile Phe Tyr Phe Leu Leu Gly Ile
 1 5 10

<210> 128
 <211> 7
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<400> 128
 Pro Val Tyr Met Ser Gln Lys
 1 5

<210> 129
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<400> 129
Asn Ile Arg Lys Gln Lys Tyr Phe Ile
1 5

<210> 130
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<400> 130
Pro Leu Asn Ile Asn Leu Ser Leu Phe Ile Ile Phe Leu
1 5 10

<210> 131
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<400> 131
His Thr Leu Phe Lys Lys Asn Leu Glu Ile
1 5 10

<210> 132
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<212> PRT
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<400> 132
Ile Val Lys Asn Ile Gly Phe Thr
1 5

<210> 133
<211> 8
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<400> 133
Met Arg Ile Ile Lys Phe Thr Asn
1 5

<210> 134
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<400> 134

Pro Tyr Ile Tyr Phe
1 5

<210> 135

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<400> 135

Arg Phe Lys Leu Ile Leu Phe Leu Pro Tyr Met His Asn Ile
1 5 10

<210> 136

<211> 39

<212> PRT

<213> Arabidopsis sp.

<400> 136

Leu Gly Met Asn Thr Asn Ile Tyr Asn Asp Ile Asn Ile Ser Leu Thr
1 5 10 15Gly His Ser Lys Met Tyr Ile Leu Ile Tyr Gln His Phe Phe Ile Gly
20 25 30Leu Leu Asn Gln Val Val Thr
35

<210> 137

<211> 35

<212> PRT

<213> Arabidopsis sp.

<400> 137

Val Asn Ala Phe Phe Phe Ile Ile Leu Tyr Met Asn Leu Asn Leu Ser
1 5 10 15Cys Gln Thr Ser Ser Lys Pro Asn Ile Tyr Ile His Ile Val Leu Tyr
20 25 30Phe Glu Asn
35

<210> 138

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 138

Asn Phe Leu Lys Phe Pro Ile Leu Phe Ser Phe
1 5 10

<210> 139
 <211> 55
 <212> PRT
 <213> Arabidopsis sp.

<400> 139
 Ser Lys Gln Val Gln Ile Arg Phe Phe Gln Ile Ile Ile Phe Leu Asn
 1 5 10 15
 Lys Val Phe Tyr Lys Lys Lys Ser Thr Ser Tyr Leu Lys Asn Pro Leu
 20 25 30
 His Tyr Pro Phe His Gln His Gln Arg Arg Arg Glu Lys Lys Arg
 35 40 45
 Arg Val Val Asn Gly Glu Gly
 50 55

<210> 140
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 <213> Arabidopsis sp.

<400> 140
 Phe His Ser Lys His Ile
 1 5

<210> 141
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 141
 Val Met Lys Ser Ile Tyr Phe Asn Cys Val Phe Met Ile Asp Gln
 1 5 10 15

<210> 142
 <211> 19
 <212> PRT
 <213> Arabidopsis sp.

<400> 142
 His Leu Gly Leu Asn Phe Leu Val Ile Tyr Tyr Val Ile Arg Pro Met
 1 5 10 15

His Asp Pro

<210> 143
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 <212> PRT
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<400> 143

Asn Phe Tyr Phe .

1

<210> 144

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 144

Ile Cys Leu Gly Lys Pro

1

5

<210> 145

<211> 107

<212> PRT

<213> Arabidopsis sp.

<400> 145

Gly Phe Ala Thr Arg Thr Lys Ser Asp Lys Arg Ala Asn Arg Lys Gly
1 5 10 15Glu Ile Ser Ala Tyr Gln Gly Lys Arg His Leu Val Ala Leu Ile Phe
20 25 30Tyr Ser Leu Leu Tyr Val Phe Leu Lys Ile Lys Glu Arg Arg Gly Leu
35 40 45Asn Leu Ile Thr Ile Arg Phe Gln Arg Asp Val Lys Ile His Leu Ile
50 55 60Asn Ser Tyr Thr Leu Val Ile Ile Phe Lys Thr Lys Lys Arg Asn Phe
65 70 75 80Gln Thr Phe Lys Leu Lys Thr Glu Phe Arg Lys Cys Gln Arg Ile Asp
85 90 95Asn Asp Ile Gln Ile Cys Arg Val Ser Lys Thr
100 105

<210> 146

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 146

Asn Lys Lys Ile Ile Asn Ile Phe Ile Ile
1 5 10

<210> 147

<211> 30

<212> PRT

<213> Arabidopsis sp.

<400> 147

Ser Trp Asn Leu Gly Tyr Lys Ile Lys Leu Lys Ile Ile Val Asp Phe
 1 5 10 15

Phe Val Phe Val Lys Gln Asn Ser Asn Thr Ile Cys Phe Phe
 20 25 30

<210> 148

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 148

Tyr Lys Glu Thr Lys
 1 5

<210> 149

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 149

Val Gln Ile Val Phe Phe Leu Thr Phe Ser Gln Lys Ser Gln Asp
 1 5 10 15

<210> 150

<211> 38

<212> PRT

<213> Arabidopsis sp.

<400> 150

Cys Ile Tyr Gln Glu Ile Glu Ile Lys Thr Phe Val Phe Lys Tyr Ser
 1 5 10 15

Ser Phe Thr Ile Tyr Arg Val Gln Phe Leu Lys Phe Lys Lys Ser Phe
 20 25 30

Thr Tyr Ile Leu Leu Asp
 35

<210> 151

<211> 147

<212> PRT

<213> Arabidopsis sp.

<400> 151

Gln Arg Lys Phe Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala
 1 5 10 15

Ser His His Gln Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp
 20 25 30

Asn Gly Gly Asp Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu
 35 40 45

Arg His Phe Ser Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly
 50 55 60

Tyr Val Leu Asp Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro
 65 70 75 80

Leu Phe Leu Asp Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro
 85 90 95

Ile Val Glu Lys Leu Pro Arg Ser Ile Thr Trp Val Phe Thr Lys Arg
 100 105 110

His Val Cys Phe Leu Phe Arg Thr Ser Phe Lys Ile Leu Ile Ile Tyr
 115 120 125

Tyr Ile Val Ile Thr His Ser Ala Tyr Ile His Phe Phe Asn Ile Ala
 130 135 140

Val Ala Ser
 145

<210> 152

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 152

Trp Leu Lys Val Ile Leu
 1 5

<210> 153

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 153

Leu Val Arg Asp Lys Ser Ile Ile
 1 5

<210> 154

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 154

Met Val Arg His
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<210> 155

<211> 26

<212> PRT

<213> Arabidopsis sp.

<400> 155

Ala	Val	Lys	Lys	Met	Arg	Lys	Met	Lys	Lys	Lys	Met	Arg	Lys	Lys	Ser
1				5					10					15	

Arg	Lys	Lys	Asn	Ala	Asn	Phe	Leu	Lys	Met
			20					25	

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<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 156

Thr	Asp	Leu	Tyr	Gly
1				5

<210> 157

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 157

Phe	Leu	His	Tyr	Ile	Cys	Ser
1					5	

<210> 158

<211> 25

<212> PRT

<213> Arabidopsis sp.

<400> 158

Leu	Leu	Ile	Cys	Ser	Pro	Tyr	Leu	Ile	Asn	Cys	Ser	Arg	Asn	Phe	Gln
1				5					10					15	

Asp	Gly	Trp	Ala	Gly	Leu	Trp	Phe	Gly
			20					25

<210> 159

<211> 32

<212> PRT

<213> Arabidopsis sp.

<400> 159

Ser	Gly	Arg	Ala	Ala	Cys	Ser	Arg	Gln	Val	Pro	Arg	Ser	Gly	Cys	Phe
1					5					10				15	

Gly	His	Ile	Gly	Asn	Asn	Ile	Arg	Ile	Lys	Thr	Ser	Tyr	Val	Asp	Gln
			20					25						30	

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 <212> PRT
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<400> 160
 Leu Ser Cys Leu Phe Asn Phe Cys Cys Phe Ser Ser
 1 5 10

<210> 161
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 <212> PRT
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<400> 161
 Ile Phe Lys Ser Asn Val Gly Lys Ile Gln
 1 5 10

<210> 162
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.

<400> 162
 Trp Asn Cys Trp
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<210> 163
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 <212> PRT
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<400> 163
 Phe Asp Ile Gln Asp Asn Asn Tyr Cys Phe Pro Gly Phe Cys
 1 5 10

<210> 164
 <211> 59
 <212> PRT
 <213> Arabidopsis sp.

<400> 164
 Thr Ser Leu Pro Ser Leu His Gly Asn Phe Glu Ser Phe Phe Asn
 1 5 10 15

Leu Ala Thr Lys Lys Gly Asp Asp His Thr Cys Phe Tyr Phe Ile Leu
 20 25 30

Ser Phe Val Leu Gln Ile Phe Asp Cys His Met His Glu Lys Tyr Glu
 35 40 45

Pro Glu Ser Arg Ser Val Ser Ile Lys Phe Ile
 50 55

<210> 165
 <211> 15
 <212> PRT
 <213> Arabidopsis sp.

<400> 165
 Ile Ile Leu Leu Val Ser Gln Pro Leu Tyr Ile Arg Leu Ser Asp
 1 5 10 15

<210> 166
 <211> 56
 <212> PRT
 <213> Arabidopsis sp.

<400> 166
 Ile Ala Leu Ala Cys Gln Ser Glu Asp Lys Ser Ser Leu Phe Glu Asp
 1 5 10 15

Glu Asp Arg Gln Pro Cys Ser Glu His Cys Tyr Leu Lys Val Ser Ile
 20 25 30

Ser Leu Pro Leu Ser Leu Asn Phe Phe Val Tyr Ser Leu Ile Thr Phe
 35 40 45

Ile Ser Tyr Trp Phe Asn Ile Lys
 50 55

<210> 167
 <211> 50
 <212> PRT
 <213> Arabidopsis sp.

<400> 167
 Val Arg Ser Val Thr Glu Ala Asp His Val Met Asp Asn Asp Asn Ser
 1 5 10 15

Ile Ser Asn Lys Ile Val Val Ser Asp Pro Asn Asn Thr Met Trp Thr
 20 25 30

Pro Val Glu Lys Asp Leu Tyr Leu Lys Gly Ile Glu Ile Phe Gly Arg
 35 40 45

Asn Arg
 50

<210> 168
 <211> 68
 <212> PRT
 <213> Arabidopsis sp.

<400> 168
 Lys Asn Lys Asn Arg Phe Asn Ala Leu Ile Tyr Ile Leu Thr Leu Tyr
 1 5 10 15

Ser Leu Ile Met Leu Val Arg Ser Cys Asp Val Ala Leu Asn Ile Leu
 20 25 30

Arg Gly Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg Glu Gln
 35 40 45

Asp Gln Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Gln Arg His
 50 55 60

Asn Gln Val His
 65

<210> 169

<211> 23

<212> PRT

<213> Arabidopsis sp.

<400> 169

Lys His Met Lys Phe Pro Ile Cys Val Asp Gly Phe Ile Thr Gly Tyr
 1 5 10 15

Gln Lys Ser Ile Ser Lys Lys
 20

<210> 170

<211> 22

<212> PRT

<213> Arabidopsis sp.

<400> 170

Val Gly Pro Gln Lys Ile Glu Thr Pro Lys Ile Cys Ser Leu Ser Ala
 1 5 10 15

Cys Phe Lys Glu Asn Asn
 20

<210> 171

<211> 41

<212> PRT

<213> Arabidopsis sp.

<400> 171

Ala Leu His Thr Met His Leu Gln Val Lys Met Trp Thr Ala Met Pro
 1 5 10 15

Leu Phe Asn Ser Arg Lys Leu Leu Arg Glu Ile Leu Arg Val Cys His
 20 25 30

Ser Ile Phe Pro Lys Pro Glu Asp Pro
 35 40

<210> 172

<211> 108

<212> PRT

<213> Arabidopsis sp.

<400> 172

Val Cys Ile Phe Cys Ser Gly Ala Gln Arg Ile Ala Thr Ile Ala Leu
 1 5 10 15

Glu Asp Val Ile Val Gln Leu Ala Asn Ala Gln Ile Asp Asn Val Leu
 20 25 30

Val Leu Leu Leu Ile Val Asn Ala Ile Gln Ile Phe Val Gly Val Val
 35 40 45

Leu Leu Gly Asn Thr Phe Thr Ser Ile Ser Leu Tyr Thr Asn Ser Ile
 50 55 60

Ile Lys Val Ile Gln Thr Lys Ser Leu Ile Lys Lys Thr Leu Tyr Ile
 65 70 75 80

Ala Val Glu Met Ala Leu Leu Val Arg His Gln Cys Lys Ser Asn Ala
 85 90 95

Arg Thr Cys Asn Ser Ser Phe Lys Pro Ile Lys Arg
 100 105

<210> 173

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 173

Ser Thr Ser Asn Pro Tyr Arg Lys Phe Lys Thr Asn Tyr Thr Lys Asp
 1 5 10 15

Ile

<210> 174

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 174

Leu Ser Phe Pro Val Phe Tyr
 1 5

<210> 175

<211> 39

<212> PRT

<213> Arabidopsis sp.

<400> 175

Ile Leu Ile Gly Lys Ser Asp Val His Gly Trp Gly Ala Phe Thr Trp
 1 .5 10 15

Val Ser Asn His Val Asn Ile Arg Ile Ser Leu Ile Val Ile Gly Ala
 20 25 30

Phe Ile Thr Leu Phe Phe Phe
 35

<210> 176

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 176

Cys Phe Ile Leu
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<210> 177

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 177

Thr Ile Lys Tyr Ile Val
 1 5

<210> 178

<211> 53

<212> PRT

<213> Arabidopsis sp.

<400> 178

Tyr Gly Leu Thr Arg Gln Asp Ser Leu Lys Lys Asn Glu Tyr Leu Gly
 1 5 10 15

Glu Tyr Thr Gly Glu Leu Ile Thr His Asp Glu Ala Asn Glu Arg Gly
 20 25 30

Arg Ile Glu Asp Arg Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp
 35 40 45

Gln Val Thr Ser Glu
 50

<210> 179

<211> 28

<212> PRT

<213> Arabidopsis sp.

<400> 179

Ser Asn Val Leu Ile Ile Arg Gly Leu His Ile Tyr Ser Asn Gln Ser
 1 5 10 15

Asn Ile Tyr Phe Thr Ala Arg Asn Arg Cys Ser Pro
 20 25

<210> 180

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 180

Arg Lys Arg Val Gln Ile Ser Gln Ser Leu Ser Lys Thr
 1 5 10

<210> 181

<211> 16

<212> PRT

<213> Arabidopsis sp.

<400> 181

Leu Leu Arg Gln Gly Thr Lys Pro Leu Tyr Phe Ile Leu Asn Lys Tyr
 1 5 10 15

<210> 182

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 182

His Tyr Thr Asn Lys Asn Thr Tyr Val Ser Phe Phe Ser
 1 5 10

<210> 183

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 183

Ile Val Tyr Gln Leu Tyr Ser Ser Leu Ile Gly Phe His Ile Glu Asp
 1 5 10 15

Ile Pro Arg Asn Ser Asn Ser Phe
 20

<210> 184

<211> 78

<212> PRT

<213> Arabidopsis sp.

<400> 184
Met Ile Phe Ser Cys Arg Glu Asn Leu Gly Tyr Glu Asn Leu Trp Phe
1 5 10 15

Arg Val Gln Leu Met Ile Val Arg Gly Asp Gln Arg Ile Gly Leu Phe
20 25 30

Ala Glu Arg Ala Ile Glu Glu Gly Glu Leu Phe Phe Asp Tyr Cys
35 40 45

Tyr Gly Pro Glu His Ala Asp Trp Ser Arg Gly Arg Glu Pro Arg Lys
50 55 60

Thr Gly Ala Ser Lys Arg Ser Lys Glu Ala Arg Pro Ala Arg
65 70 75

<210> 185

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 185
Gly Glu Ala Ala Ile Gln Ala Val Leu Phe Leu Cys Tyr Gly Ile Ser
1 5 10 15

Ile Asn Asn Val Met Leu Phe Cys Val Thr Lys Pro Lys Leu Lys Phe
20 25 30

Leu Phe Tyr Leu Phe
35

<210> 186

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 186

Gly Val Leu Phe Val Ser Tyr Val Ser
1 5

<210> 187

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 187

Leu Ser Lys Phe Ser Phe Cys Ile Ser Ile
1 5 10

<210> 188

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 188

Lys Gln Cys Leu Cys Cys
1 5

<210> 189

<211> 29

<212> PRT

<213> Arabidopsis sp.

<400> 189

Thr Phe Gly Lys Lys Lys Leu Cys Thr Thr Leu His Leu Phe Ser Leu
1 5 10 15His Leu Ala Lys Asn His Ile Thr Gln Val Cys Gly Thr
20 25

<210> 190

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 190

Cys Thr Lys Met Ser Lys
1 5

<210> 191

<211> 12

<212> PRT

<213> Arabidopsis sp.

<400> 191

Trp Val Leu Ser Leu Lys Lys Asn Ile Gly Tyr Glu
1 5 10

<210> 192

<211> 19

<212> PRT

<213> Arabidopsis sp.

<400> 192

Ser Ile Val Arg Ile Leu Gly Ile Ser Ser Phe Gly Phe Lys Thr Phe
1 5 10 15

Phe Glu Ile

<210> 193

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 193
 Phe Cys Ser Leu Leu Ser Asn Thr Trp Lys Asn His Gln Gln Ser Gly
 1 5 10 15

Cys Ser Leu Arg Lys Val Leu Leu
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<210> 194
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<400> 194
 Cys Lys Tyr Val Phe Asp Ala Ser Asn Ile
 1 5 10

<210> 195
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<400> 195
 Tyr Leu Asn Lys
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<210> 196
 <211> 13
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<400> 196
 Lys Gln Lys Lys Arg Lys Lys Leu Phe Lys Ile Arg Lys
 1 5 10

<210> 197
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<400> 197
 Leu Phe Ser Lys Asn Leu Asn Tyr Lys Leu Lys Cys Leu Glu Ser Arg
 1 5 10 15

Thr Thr Ile Ala Lys Tyr Lys Cys
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<400> 198

Ile Tyr Met Lys Met

1 5

<210> 199

<211> 13

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Lys Thr Cys Trp Ile Cys Gly Ile Val Asn Asp His Gly

1 5 10

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Met Ala Gly Ser

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Ile His Tyr Phe

1

<210> 202

<211> 48

<212> PRT

<213> Arabidopsis sp.

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Lys Ser Asn Phe Phe Ile Ser Ile Ile Cys Phe Lys Glu Lys Lys Asn

1 5 10 15

Thr Arg Arg Leu Ser Ile Cys Arg Leu Cys Ser Ser Val Asn Leu Tyr

20 25 30

Phe Lys Thr Gly Gly Leu Phe Ile Thr Ile Ser Leu Asp Met Phe Leu

35 40 45

<210> 203

<211> 24

<212> PRT

<213> Arabidopsis sp.

<400> 203
 Cys Arg Pro Lys Asn Arg Glu Ile Arg Lys Gly Thr Phe Val Val Ile
 1 5 10 15

Val Thr Lys Gln Lys Ser Leu Tyr
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 Ile Ile Arg Lys Asp Glu Lys Ile Lys Pro Leu
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<210> 205
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<400> 205
 Leu Asp Asp His Arg Arg Gly Cys Gln Leu Gln Ser
 1 5 10

<210> 206
 <211> 34
 <212> PRT
 <213> Arabidopsis sp.

<400> 206
 Cys Phe Tyr Ile Asp Leu Ser Tyr Ile Leu Cys Ser Phe Thr Phe Lys
 1 5 10 15

Lys Gln Tyr His Pro Ile Phe Phe Leu Leu Ser Val Ser Ile Phe
 20 25 30

Ala Asn

<210> 207
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 Arg Asn Thr Lys Glu His Lys Lys Gln Leu Val Pro Asp Ser Thr Ile
 1 5 10 15

Ser Asn Asp Leu His
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<210> 208

<211> 106

<212> PRT

<213> Arabidopsis sp.

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Pro Pro Pro Pro Ser Ile Phe Pro Leu Ser Phe Thr Ser Leu Ser Leu
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Tyr Leu Leu Asn Ser Gly His Arg Leu Arg Arg Phe Leu Cys Tyr Ser
 20 25 30

Pro Gly Arg Cys Arg Ser Leu Ile His Asp Leu Val Ser His His Arg
 35 40 45

Leu His Phe Asn Pro Gln Ser Leu Arg Lys Thr Arg Met Leu Cys Ser
 50 55 60

Pro Phe Pro Ser Leu His Leu Leu Asp Arg Ser Leu His Arg Pro Ser
 65 70 75 80

Leu Cys Leu Trp Asp Gln Lys Asn His Glu His Asp His Val Tyr Lys
 85 90 95

Ser Arg Gln Lys Leu Val Ser Cys Asp Thr
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<400> 209

Lys Met Asp Val Gly
 1 5

<210> 210

<211> 15

<212> PRT

<213> Arabidopsis sp.

<400> 210

Gly Phe Val Leu Phe Gly Ala Thr Arg Ser Asp Ala Asp Val Val
 1 5 10 15

<210> 211

<211> 32

<212> PRT

<213> Arabidopsis sp.

<400> 211

Gln His Tyr Ile Trp Gly Leu Arg Gly Gly Glu Val Val Arg Glu Ser
 1 5 10 15

Arg Cys Gly Ser Asp Leu Trp Tyr Asn Val Val Val Glu Ala Lys Arg
 20 25 30

<210> 212

<211> 11

<212> PRT

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<400> 212

Gly Arg Lys Ser Cys Gly Gly Tyr Gly Gly
 1 5 10

<210> 213

<211> 42

<212> PRT

<213> Arabidopsis sp.

<400> 213

Pro Pro His Ser Phe Gly Gly Ser Gln Phe Cys Glu Leu Val Tyr Val
 1 5 10 15

Leu His Leu Cys Trp Asn Trp Phe Asn Glu Asp Leu Gln Arg Val Phe
 20 25 30

Gly Phe Cys Glu Tyr Val Asp Phe Glu His
 35 40

<210> 214

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 214

Glu Val Glu Lys Arg Leu
 1 5

<210> 215

<211> 4

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<400> 215

Ile Met Cys Phe
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<210> 216

<211> 27

<212> PRT

<213> Arabidopsis sp.

<400> 216
 Ser Cys Val Arg Tyr Leu Thr Tyr Tyr Thr His Leu Leu Asn Val Phe
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Glu Ile Phe Leu Phe Leu Phe Ser Ile Ser Cys
 20 25

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 <211> 25
 <212> PRT
 <213> Arabidopsis sp.

<400> 217
 Glu Phe Asn Pro Tyr Ile Cys His Lys Asn Ser Arg Ile Ser Glu Ser
 1 5 10 15

Lys Asn Ile Leu Ser Lys Asn Asn His
 20 25

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<400> 218
 Leu Tyr Phe Tyr Asn Thr Pro Phe Leu Arg Lys Thr Trp Arg Phe Asn
 1 5 10 15

<210> 219
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<400> 219
 Lys Ile Ser Asp Leu Arg Arg Ser Phe Lys Cys Val
 1 5 10

<210> 220
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 <212> PRT
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<400> 220
 Leu Asn Leu Arg Ile Glu
 1 5

<210> 221
 <211> 25
 <212> PRT
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<400> 221

Tyr Ser His Ile Tyr Ile Phe Glu Asp Leu Asn Ser Phe Cys Phe Phe
 1 5 10 15

His Ile Cys Ile Ile Tyr Lys Leu Lys
 20 25

<210> 222

<211> 9

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<400> 222

Ile Leu Ile Tyr Ile Met Thr Leu Ile
 1 5

<210> 223

<211> 10

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<400> 223

Val Leu Pro Asp Thr Pro Lys Cys Ile Tyr
 1 5 10

<210> 224

<211> 9

<212> PRT

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<400> 224

Ser Ile Asn Ile Phe Ser Leu Val Tyr
 1 5

<210> 225

<211> 14

<212> PRT

<213> Arabidopsis sp.

<400> 225

Thr Lys Leu Ser His Lys Tyr Glu Leu Thr Pro Phe Phe Leu
 1 5 10

<210> 226

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 226

Ala Val Lys Arg Gln Ala Asn Pro Thr Ser Thr Tyr Ile
 1 5 10

74

<210> 227
<211> 30
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<400> 227
Tyr Tyr Ile Leu Lys Ile Lys Ile Phe Leu Asn Phe Pro Tyr Tyr Phe
1 5 10 15
Pro Phe Lys Ala Ser Lys Ser Lys Tyr Val Ser Ser Arg Leu
20 25 30

<210> 228
<211> 15
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<400> 228
Phe Ser Leu Ile Arg Phe Ser Thr Lys Lys Asn Gln Leu Leu Ile
1 5 10 15

<210> 229
<211> 39
<212> PRT
<213> Arabidopsis sp.

<400> 229
Lys Thr Leu Cys Ile Ile Leu Phe Thr Asn Ile Arg Glu Asp Glu Lys
1 5 10 15
Lys Arg Arg Gly Glu Trp Leu Met Glu Lys Val Ser Phe Thr Pro Asn
20 25 30

Ile Tyr Glu Leu Thr Arg Leu
35

<210> 230
<211> 9
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<400> 230
Asn Pro Tyr Ile Leu Ile Val Cys Leu
1 5

<210> 231
<211> 4
<212> PRT
<213> Arabidopsis sp.

<400> 231
Ile Asn Asn Ile
1

<400> 256

Thr Ala Gln Glu Ile Phe Arg Thr Val Gly Gln Asp Tyr Gly Leu Asp
 1 5 10 15

Asp Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu Val Asp Val
 20 25 30

Ser Asp Ile Leu Val Thr Ile Phe Glu
 35 40

<210> 257

<211> 30

<212> PRT

<213> Arabidopsis sp.

<400> 257

Lys Leu His Thr Ser Ile Asn Asn Phe Pro Ala Tyr Leu Ile Phe Val
 1 5 10 15

Val Phe Arg Arg Glu Lys Cys Phe Lys Phe Ser Asn Leu Met
 20 25 30

<210> 258

<211> 51

<212> PRT

<213> Arabidopsis sp.

<400> 258

Glu Arg Tyr Asn Glu Leu Lys Leu Lys Asn Asp Gly Thr Ala Gly Glu
 1 5 10 15

Ala Ser Asp Leu Thr Ser Lys Thr Ile Thr Thr Ala Phe Gln Asp Phe
 20 25 30

Ala Asp Arg Arg His Cys Arg Arg Cys Met Val Thr Leu Asn Leu Ser
 35 40 45

Phe Leu Ile
 50

<210> 259

<211> 36

<212> PRT

<213> Arabidopsis sp.

<400> 259

Pro Gln Lys Arg Glu Met Ile Ile His Val Phe Ile Leu Phe Tyr His
 1 5 10 15

Leu Phe Tyr Arg Tyr Ser Ile Val Ile Cys Met Arg Ser Met Ser Pro
 20 25 30

Ser Leu Asp Pro
 35

<210> 260
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 <212> PRT
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<400> 260
 Ala Leu Asn Ser Phe Lys Leu Phe Cys
 1 5

<210> 261
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<400> 261
 Phe His Asn Pro Tyr Ile
 1 5

<210> 262
 <211> 50
 <212> PRT
 <213> Arabidopsis sp.

<400> 262
 Val Ile Asn Leu Ile Arg Leu Leu Trp Leu Val Arg Ala Lys Thr Asn
 1 5 10 15

Leu Val Cys Leu Arg Met Lys Ile Asp Asn His Ala Val Ser Ile Val
 20 25 30

Thr Ser Arg Ser Leu Ser Leu Ser Leu Ser Ile Phe Leu Ser
 35 40 45

Ile Pro
 50

<210> 263
 <211> 12
 <212> PRT
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<400> 263
 Leu Arg Leu Leu Val Thr Gly Leu Ile Leu Asn Arg
 1 5 10

<210> 264
 <211> 5
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<400> 264
 Gln Lys Leu Ile Met
 1 5

<210> 265
 <211> 23
 <212> PRT
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<400> 265
 Trp Ile Met Ile Thr Leu Tyr Gln Thr Arg Leu Trp Ser Gln Ile Gln
 1 5 10 15
 Thr Thr Leu Cys Gly Arg Leu
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<210> 266
 <211> 5
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<400> 266
 Arg Arg Ile Phe Thr
 1 5

<210> 267
 <211> 19
 <212> PRT
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<400> 267
 Lys Glu Leu Arg Tyr Leu Gly Glu Thr Gly Lys Lys Ile Lys Ile Asp
 1 5 10 15
 Leu Met His

<210> 268
 <211> 8
 <212> PRT
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<400> 268
 Tyr Ile Tyr Leu His Cys Ile Pro
 1 5

<210> 269
 <211> 10
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<400> 269
 Leu Cys Trp Phe Ala Val Val Met Leu His
 1 5 10

<210> 270
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<400> 270
 Thr Tyr Phe Gly Gly Leu Arg Arg Ala
 1 5

<210> 271
 <211> 15
 <212> PRT
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<400> 271
 Arg Phe Thr Ile Thr Cys Ala Asn Lys Ile Asn Val Leu Cys His
 1 5 10 15

<210> 272
 <211> 28
 <212> PRT
 <213> Arabidopsis sp.

<400> 272
 Thr Leu Thr Lys Leu His Lys Asp Thr Ile Arg Tyr Thr Asn Leu Cys
 1 5 10 15

Arg Asn Tyr Ser His Asp Met Tyr Val Lys Asn Thr
 20 25

<210> 273
 <211> 95
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 <213> Arabidopsis sp.

<400> 273
 Ser Phe Leu Tyr Val Leu Met Val Leu Ser Gln Val Thr Lys Lys Val
 1 5 10 15

Ser Arg Lys Ser Ser Arg Ser Val Arg Lys Lys Ser Arg Leu Arg Lys
 20 25 30

Tyr Ala Arg Tyr Pro Pro Ala Leu Lys Lys Thr Thr Ser Gly Glu Ala
 35 40 45

Lys Phe Tyr Lys His Tyr Thr Pro Cys Thr Cys Lys Ser Lys Cys Gly
 50 55 60

Gln Gln Cys Pro Cys Leu Thr His Glu Asn Cys Glu Lys Tyr Cys
 65 70 75 80

Gly Tyr Val Ile Gln Phe Phe Leu Ser Arg Lys Ile His Glu Ile
 85 90 95

<210> 274

<211> 22

<212> PRT

<213> Arabidopsis sp.

<400> 274

Phe	Glu	His	Glu	Phe	Val	Phe	Phe	Val	Gln	Val	Leu	Lys	Gly	Leu	Gln
1				5					10					15	

Gln	Ser	Leu	Trp	Arg	Met
				20	

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<211> 16

<212> PRT

<213> Arabidopsis sp.

<400> 275

Leu	Cys	Asn	Trp	Pro	Met	His	Lys	Ser	Thr	Met	Ser	Leu	Phe	Cys	Cys
1				5					10					15	

<210> 276

<211> 11

<212> PRT

<213> Arabidopsis sp.

<400> 276

Met	Arg	Ser	Arg	Ser	Leu	Ser	Glu	Leu	Ser	Ser
1				5					10	

<210> 277

<211> 13

<212> PRT

<213> Arabidopsis sp.

<400> 277

Val	Thr	Leu	Ser	Leu	Gln	Tyr	Leu	Phe	Ile	Gln	Ile	Leu
1				5					10			

<210> 278

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 278

Phe	Lys	Pro	Lys	Val	Leu
1				5	

<210> 279

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 279

Lys Lys Leu Tyr Ile
1 5

<210> 280

<211> 7

<212> PRT

<213> Arabidopsis sp.

<400> 280

Leu Trp Arg Trp His Ser Trp
1 5

<210> 281

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 281

Asp Thr Ser Ala Asn Pro Met Gln Glu His Ala Ile Pro Pro Ser Asn
1 5 10 15

Gln

<210> 282

<211> 45

<212> PRT

<213> Arabidopsis sp.

<400> 282

Lys Gly Asn Gln Arg Gln Ile Arg Thr Glu Asn Leu Lys Leu Ile Ile
1 5 10 15Arg Lys Thr Phe Asn Tyr His Phe Pro Tyr Phe Thr Arg Phe Ser Leu
20 25 30Glu Ser Leu Met Phe Met Asp Gly Val His Leu His Gly
35 40 45

<210> 283

<211> 5

<212> PRT

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<400> 283

Leu Leu Val His Ser
1 5

<210> 284

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 284
 His Phe Phe Phe Asn Asn Val Leu Tyr Phe Arg Pro Leu Asn Ile
 1 5 10 15

Leu Cys Asp Met Val
 20

<210> 285
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 <212> PRT
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<400> 285
 Pro Val Arg Thr Leu Leu Lys Arg Met Ser Ile Ser Glu Asn Ile Leu
 1 5 10 15

Glu Asn

<210> 286
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 <212> PRT
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<400> 286
 Ser Leu Met Met Lys Leu Met Ser Val Gly Glu
 1 5 10

<210> 287
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<400> 287
 Lys Ile Gly Leu Val Leu Pro Thr Ser Leu Pro
 1 5 10

<210> 288
 <211> 9
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<400> 288
 Leu Gln Asn Asn Phe Glu Val Thr Phe
 1 5

<210> 289
 <211> 51
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<400> 289
 Ser Phe Ala Gly Tyr Thr Ser Ile Arg Ile Lys Val Thr Phe Ile Leu
 1 5 10 15

Gln Leu Glu Ile Asp Ala Arg Arg Lys Gly Asn Glu Phe Lys Phe Leu
 20 25 30

Asn His Ser Ala Arg Pro Asn Cys Tyr Ala Lys Val Leu Ser Arg Tyr
 35 40 45

Thr Leu Ser
 50

<210> 290

<211> 26

<212> PRT

<213> Arabidopsis sp.

<400> 290

Thr Asn Thr Asn Ile Ile Gln Thr Lys Ile Leu Met Leu Val Ser Leu
 1 5 10 15

Val Lys Ser Cys Ile Asn Phe Thr Arg Arg
 20 25

<210> 291

<211> 16

<212> PRT

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<400> 291

Leu Val Phe Ile Leu Lys Ile Phe Gln Glu Thr Gln Thr His Phe Lys
 1 5 10 15

<210> 292

<211> 7

<212> PRT

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<400> 292

Phe Phe Leu Val Glu Lys Ile
 1 5

<210> 293

<211> 10

<212> PRT

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<400> 293

Val Thr Lys Ile Tyr Gly Phe Val Cys Ser
 1 5 10

<210> 294

<211> 57

<212> PRT

<213> Arabidopsis sp.

<400> 294

Glu Glu Ile Arg Gly Leu Val Tyr Leu Arg Arg Glu Gln Ser Lys Lys
 1 5 10 15

Val Arg Ser Phe Ser Ser Thr Thr Ala Met Asp Gln Asn Met Arg Ile
 20 25 30

Gly Arg Val Val Glu Asn Leu Glu Arg Leu Val Leu Lys Gly Leu
 35 40 45

Arg Lys Pro Val Gln Leu Val Ser Phe
 50 55

<210> 295

<211> 21

<212> PRT

<213> Arabidopsis sp.

<400> 295

Ser Glu Glu Lys Gln Gln Phe Lys Gln Ser Phe Phe Tyr Val Met Val
 1 5 10 15

Tyr Gln Leu Ile Met
 20

<210> 296

<211> 66

<212> PRT

<213> Arabidopsis sp.

<400> 296

Cys Tyr Phe Val Leu Leu Asn Gln Asn Leu Ser Phe Cys Phe Ile Cys
 1 5 10 15

Phe Arg Val Phe Cys Leu Tyr His Met Cys Leu Asn Phe Gln Ser Phe
 20 25 30

Leu Phe Val Phe Gln Phe Lys Asn Asn Val Tyr Val Val Ser Leu His
 35 40 45

Arg Pro Leu Glu Lys Lys Ser Phe Ala Gln Leu Tyr Ile Tyr Leu Val
 50 55 60

Phe Ile
 65

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<400> 297
 Arg Lys Ile Thr
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<210> 298
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 <212> PRT
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 His Lys Ser Val Val Arg Asn Val Gln Lys Cys Gln Asn Asn Gly Phe
 1 5 10 15

Tyr His

<210> 299
 <211> 9
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<400> 299
 Lys Lys Ile Leu Val Met Asn Glu Val
 1 5

<210> 300
 <211> 18
 <212> PRT
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<400> 300
 Val Leu Ala Arg Leu Val Leu Lys Arg Phe Ser Arg Phe Asn Phe Val
 1 5 10 15

Val Tyr

<210> 301
 <211> 32
 <212> PRT
 <213> Arabidopsis sp.

<400> 301
 Val Ile His Gly Arg Ile Ile Asn Lys Val Ala Val Ala Tyr Glu Arg
 1 5 10 15

Phe Tyr Phe Asn Val Asn Met Tyr Leu Met His Leu Thr Phe Ser Ile
 20 25 30

<210> 302
 <211> 22
 <212> PRT
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<400> 302
 Thr Asn Lys Asn Lys Lys Lys Glu Lys Ser Ser Leu Lys Ser Glu Ser
 1 5 10 15

Asn Tyr Phe Gln Lys Ile
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<210> 303
 <211> 21
 <212> PRT
 <213> Arabidopsis sp.

<400> 303
 Ile Ile Asn Leu Asn Val Trp Asn Arg Glu Arg Leu Leu Leu Asn Ile
 1 5 10 15

Asn Ala Lys Tyr Thr
 20

<210> 304
 <211> 20
 <212> PRT
 <213> Arabidopsis sp.

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Lys Trp Arg Asp
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 Cla-73

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 ggcgacatc aaacctactt agc

23

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24

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<220>
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 Nir-C-2-S-N

<400> 307
 cggtcatcaa gtgagttatg aag

23

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 ggtccaatcg gcaatgagt

19

<210> 309
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<220>
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 cerlns10596n

<400> 309
 gtccaatcgg caatgagtag ag

22

<210> 310
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 <212> DNA
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<220>
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 La-4Cla-S-S

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 gtgtgcctaa cagtttccgc ac

22

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 cerlns10265n

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40

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 cerlns10129n

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24

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 <212> DNA
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<220>
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 cerlns10030n

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22

<210> 315
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 <212> DNA
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<220>
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 cerlms9922n

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<210> 316
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<400> 316
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20

<210> 317
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<220>
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 cerlms98f9511n

<400> 317
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20

<210> 318
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cerlms8795n

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19

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<210> 324

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<400> 324

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40

SEQUENCE LISTING

Paper
Sub #4

SEQ ID NO:1

cDNA sequence of *FIE1*.

SEQ ID NO:2

Amino acid sequence of *FIE1*.

SEQ ID NO:3

cDNA sequence of *FIE3*.

SEQ ID NO:4

Amino acid sequence *FIE3*.

SEQ ID NO:5

Genomic sequence of *FIE3*.

SEQ ID NO:6

Genomic sequence of *FIE1*.

Seq. ID No: 2

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Sequence Size      : 2136
Sequence Position: 1 - 2136
Translation Position: 1 - 2136;
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[illegible]

SEQ ID NO:3

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SEQ ID NO:4

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		14150	14160	14170	14180	14190	14200	14210	14220	14230	14240	14250	14260
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		14510	14520	14530	14540	14550	14560	14570	14580	14590	14600	14610	14620
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		14750	14760	14770	14780	14790	14800	14810	14820	14830	14840	14850	14860
		14870	14880	14890	14900	14910	14920	14930	14940	14950	14960	14970	14980
		14990	15000	15010	15020	15030	15040	15050	15060	15070	15080	15090	15100
		15110	15120	15130	15140	15150	15160	15170	15180	15190	15200	15210	15220
		15230	15240	15250	15260	15270	15280	15290	15300	15310	15320	15330	15340
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perl ns98f8483s(1>20)
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-24-ENID

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(1385 < 1) Des. g. 11.5 p. 11.5

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C-1118541; Date 01/23/2000; 1-1

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[illegible]

